

APPLICATION
FOR
UNITED STATES LETTERS PATENT

TITLE: DELIVERING ELECTRONIC CONTENT

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665701-47/2260

"EXPRESS MAIL" Mailing Label Number EM529183811US

Date of Deposit January 15, 1999

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09/23/714



DELIVERING ELECTRONIC CONTENT

Technical Field

5 This invention relates to delivering electronic content.

Background

10 The Internet offers a tremendous amount of information on a wide range of subjects. Many businesses and organizations offer world-wide-web sites that promote products, offer technical assistance, and provide other useful information. Search engines (e.g., Yahoo™) typically can provide lengthy lists of sites related to any topic of interest. Users typically do not want to take the time to
15 investigate more than a handful of these sites. As a result, the vast number of web-sites makes it difficult for web-site providers to lure Internet users to their respective sites.

20 Since the inception of the web, web-pages have featured links to other sites. A link can appear as underlined text (e.g., "please visit deskgate"), as a picture, or as a sequence of images. Each link has an associated URL (universal resource locator) that identifies a web-site. For example, the URL associated with the
25 deskgate link is http://www.deskgate.com. A link can be programmed to transport a user to a link's associated URL when a user selects the link (e.g., by clicking a mouse button).

30 To attract users to a site, some businesses rent space on other web-pages. For example, as shown in FIG. 1, a newspaper web-page 100 includes a variety of links to other sites. As shown, the web-page includes a banner 102 (i.e., a picture link in the shape of a banner) linked to a

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resort's web-site. By selecting the link, the user is transported to the resort's web-page as shown in FIG. 2.

Summary

In general, in one aspect, a method of delivering electronic content includes providing instructions that cause a first computer to collect information including an e-mail address, and transmitting the collected information to a second computer. The second computer processes the transmitted information by selecting electronic content for transmission to the e-mail address and e-mailing the selected electronic content.

Embodiments may include one or more of the following. The instructions can be web-page instructions such as HTML. The instructions can be of a form. The instructions can collect the information by querying the computer or by receiving user input. The information can include demographic information and/or system information.

The processing can be done by a program such as a script (e.g., a CGI script). A URL (universal resource locator) displayed at a browser using the instructions may not be altered by the transmitting of the collected information. The processing can select electronic content based on the transmitted information. The electronic content can include text, graphics, audio, video and/or executable instructions.

The information transmitted can include identification of the instructions that transmitted the information and/or identification of a site that transmitted the information.

In general, in another aspect, a method of delivering electronic content includes providing web-page form instructions that cause a first computer to

interactively collect an e-mail address from a user and transmit information including the collected address information to a second computer. The method further includes processing the transmitted information at the
5 second computer by using the transmitted information to select electronic content and e-mailing the selected electronic content to the transmitted e-mail address.

In general, in another aspect, a method of delivering electronic content includes storing electronic
10 content corresponding to different sets of instructions, receiving a request for electronic content produced by one of the sets of instructions, the request including an e-mail address, and
selecting electronic content from the stored electronic
15 content based on the received request. The selected electronic content is transmitted to the e-mail address included in the request.

In general, in another aspect, a computer-implemented method of providing access to electronic content
20 includes displaying in a browser a web-page that includes a link corresponding to electronic content and in response to a user's selection of the link, collecting information without modifying the web-page displayed in the browser. The
25 collected information is transmitted to a remote server, and electronic content from the remote server is sent to the e-mail address based on the collected information.

In general, in another aspect, a computer program, disposed on a computer readable medium, includes
30 instructions for causing a first computer's processor to receive information collected by instructions at a second computer, and based on the received information, select

electronic content and transmit the electronic content to an e-mail address included in the received information.

Advantages may include one or more of the following.

By linking an e-mail based electronic content delivery
5 system to a web-page, businesses can enjoy the benefits of reaching "web-surfers" without the cost and/or computer resources needed to maintain a web-site. Linking in this manner also provides Internet users with the ability to get more information about a topic without leaving a web-page
10 and without waiting for graphics and other information to be transmitted to their browser. A business providing electronic content can not only can receive demographic data describing interested users, but also can determine which web-pages are most effective in producing requests for
15 information.

Other advantages of the invention will become apparent in view of the following description, including the figures, and the claims.

Drawing Descriptions

20 FIG. 1 is a screenshot of web-page that includes a banner.

FIG. 2 is a screenshot of a web-page reached via the banner of FIG. 1.

25 FIG. 3 is a screenshot of a web-page that includes a link.

FIG. 4 is a screenshot of a submission confirmation window.

FIG. 5 is a screenshot of an e-mail message including electronic content.

30 FIG. 6 is a listing of web-page instructions.

FIGS. 7A-7C are diagrams illustrating delivery of electronic content.

FIG. 8 is a flow chart of distribution software.

FIG. 9 is a diagram of a computer.

Detailed Description

Referring to FIG. 3, a web-page 104 viewed by a
5 network browser (e.g., Netscape™ Navigator) uses text and
graphics to present information to a user. As shown, the
text and graphics include information related to a business
enterprise. The web-page 104 also includes a form 106 that
10 accepts user input. As shown, the form 106 includes a text
entry control 108, and a submit button 110. The form 106
also provides a graphic image 112 designed to attract
attention. As shown, the form assumes the shape
traditionally associated with banner-links (e.g., a bordered
15 rectangle) but other shapes or formats could be used. The
banner shape can communicate to a user that the form 106 is
associated with a web-site other than the site the user is
currently visiting. The form 106 can include other user
input controls (not shown), for example, checkboxes that
20 identify different areas of interest (e.g., "send me
information on golf clubs" and "send me information on golf
vacations").

Unlike a conventional banner-link, interaction with
the form 106 does not transport the user to a different web-
site. Instead, submitting entered information into the form
25 (e.g., by typing information into the text box and then
clicking the submit button 110) transmits the information
entered by the user to a remote web-server without changing
the current URL being displayed by the browser. The remote
web-server uses the transmitted information to select and
30 deliver electronic content (e.g., text, graphics, audio,
video, and executable instructions) via e-mail. Co-pending
U.S. Patent Application Serial Number _____, titled

"Tracking Electronic Content", and filed November 24, 1998, describes an electronic content delivery system, and is incorporated by reference.

Referring to FIG. 4, as shown, a user has entered an
5 network e-mail address into the text field 108 and clicked
the submit button 110. This action initiates transmission
of the entered information to the remote web-server. After
submitting the information, a window 114 appears informing a
user that the information has been transmitted. The
10 feedback provided by the window 114 prevents users from
making repeated submissions in the mistaken belief their
request failed.

FIG. 5 shows the interface for an e-mail client.
After the remote web-server has received the transmitted
15 information, it selects the appropriate electronic content
and e-mails the selected electronic content to the specified
e-mail address. The requestor then can view or otherwise
access the delivered content using the e-mail client. As
shown, the electronic content may be transmitted as an e-
20 mail attachment 120. By delivering electronic content via
e-mail, users can request information without interrupting
their use of a currently displayed web-page 104 and without
waiting for a linked site's web-page to load. Additionally,
a business can deliver the content to an Internet user
25 without the cost and expense of maintaining a web-site or
reserving an Internet address.

Referring to FIG. 6, a network browser constructs a
web-page's appearance from web-page instructions 104. These
instructions 104 can be expressed in HTML (Hypertext Markup
30 Language), Java, or other formats. When a user visits a
web-page, the instructions 104 for the page are transmitted
to the user's computer for processing by the user's browser.
The instructions 104 describe the appearance and behavior of

web-page elements. For example, the instructions describe the form 106, the graphic image 112, the text control 108, and submit button 110. The instructions 104 include instructions 120 for transmitting collected information to the remote web-server for processing. As shown, the instructions 106 identify a program 122 at a remote web-server and specify values for different parameters 124a-124c. The remote server program processes the parameters to select electronic content to deliver to a specified e-mail address 108. As shown, the program is a CGI (Common Gateway Interface) script, however, programs written in other programming languages can also process the collected information (e.g., a Perl script or a Java or C++ program).

As shown, the instructions 106 transmit the e-mail address 124c interactively collected from a user and an identification of the electronic content 124b to deliver to the e-mail address specified 124c. Instead of hard-coding the content to deliver 124b, the instructions 120 can transmit an I.D. that identifies electronic content to transmit. For example, different I.D.s can be assigned to different sets of instructions 120. That is, an I.D. for the golf promotion form may be "001" while the I.D. for a car promotion form may be "002". Though the same instructions 120 can be incorporated into different web-pages, the remote server can use the I.D. to select the electronic content to transmit (e.g., information on the golf or car promotion). By using an I.D. instead of hard-coding a reference to electronic content, electronic content transmitted to a user can be easily altered.

The instructions 106 can be copied into different web-pages to reach more web users. To identify the site that produced a request for electronic content, the instructions 106 can transmit a site identification token

124a of the site transmitting the information. This information can be hard-coded (as shown) or dynamically determined by interacting with a browser's API (Application Programming Interface). By transmitting the site token
5 124a, the remote web-server can identify which web-pages produced the most number of requests for content.

The instructions 106 can be configured to interactively collect a wide variety of information from a user in addition to an e-mail address. Such information can
10 include demographic information (e.g., name, address, and age) or information describing a user's interests. The electronic content transmitted by the remote server can be selected based on this information.

Additionally, the instructions 106 can dynamically
15 access a body of information stored, for example, on the user's computer, and then transmit that information to the remote web-server. For example, the instructions can access a Windows™ registry on the user's computer to collect user and system information relating to the computer executing
20 the instructions.

Though the instructions 106 shown produce a form, the instructions 106 that collect an e-mail message by querying a user's computer (e.g., by accessing the Windows™ registry) could instead present a simple picture or text
25 (e.g., "Click here for e-mail information on golf"). When a user clicks on the picture or text, the instructions 106 dynamically collect the user's e-mail address and other information from the system and transmit the collected information to the remote server without requiring any data
30 entry by the user.

Referring to FIG. 7A-7C, a remote web-server 132 delivers electronic content 138 based on a user's interaction with a web-page 104. As shown in FIG. 7A, a

user's computer 126 runs browser software 128. When the user navigates (e.g, by following a link or entering a URL) to a web-site, the web server 130 for that web-site transmits web-page instructions 104 to the user's computer
 5 126. The user's browser 126 processes the web-page instructions 104 for display (as shown in FIG. 3).

Referring to FIG. 7B, the web-page 104 includes instructions 106 for collecting and transmitting information to the remote server 132. When a user submits a request for
 10 electronic content (e.g., clicking the submit button 110), the information 124 collected from a user and/or system is transmitted to the remote web-server 132. As described above, the information 124 includes an e-mail address and can include other information such as an I.D. and/or the
 15 address of the site 126 producing the request 124.

Referring to FIG. 7C, the remote web-server 132 includes a program 134 for processing the transmitted information 124. The program 134 can be a CGI script or alternatively a Perl, Java, or C++ program. The remote web-
 20 server also stores electronic content 138 for transmission to a requesting user. The remote web-server 132 also may include a table 136 that stores the electronic content 138 that should be sent in response to an I.D. included received information. The remote web-server 132 selects and
 25 transmits the electronic content 138a via e-mail to the e-mail address specified in the received information 124.

The remote web-server 132 produces reports based on requests that indicate which addresses received content, which web-pages produced content requests, and demographic
 30 information describing the user's requesting information. Thus, businesses can closely track their efforts at reaching users.

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The remote web-server 132 can store electronic content 138 corresponding to any number of different sets of instructions 106 (e.g., different forms). Thus, a single web-server 132 can provide electronic content delivery for a large number of different businesses or organizations. Processing requests for content typically consumes considerable computational resources on the processing computer. In addition, storing the content 138 typically requires a large volume of non-volatile storage. By letting a remote web-server dedicated to processing requests handle delivery and storage of content, the computers associated with the various enterprises will not be slowed or otherwise burdened by the processing of requests during business hours.

Referring to FIG. 8, the program 134 running on the remote web-server 132 processes information to select and e-mail electronic content to a specified e-mail address. After receiving a request for electronic content (140), the program 134 may repress transmission of information to a user's browser (e.g., for example by issuing an "echo status: 202 No Response" command). This command prevents a user's display from being altered.

The program 134 can use the I.D. to determine which electronic content to send to a specified address (142).

The program 134 can also analyze demographic data included in the received information 124 to select electronic content for delivery. After selecting the electronic content, the program 134 can e-mail the determined content (144) to the e-mail address specified in the request 124.

Referring to FIG. 9, a computer platform 146 includes a monitor 148, input devices such as a keyboard 150 and mouse 151, and a digital computer 152. The digital computer 152 includes memory 154, a processor 156, a mass

storage device 164a (e.g., a hard disk) and a network connection 160 for transmitting and receiving data. The mass storage device 164a includes instructions for an operating system 162 (e.g., Windows™ 98), distribution software 134, and electronic content 138. These instructions can be stored in other computer readable mediums such as a floppy disk 164b, a CD-ROM drive 164c, or other hardware such as an EPROM 164d. In the course of operation, the stored instructions are transferred to memory 154 and the processor 156 for execution.

The techniques described here are not limited to any particular hardware or software configuration. The techniques may be implemented in hardware or software, or a combination of the two. Preferably, the techniques are implemented in computer programs executing on programmable computers that each include a processor, a storage medium readable by the processor (including volatile and non-volatile memory and/or storage elements), at least one input device, and one or more output devices. Program code is applied to data entered using the input device to perform the functions described and to generate output information. The output information is applied to one or more output devices.

Each program is preferably implemented in a high level procedural or object oriented programming language to communicate with a computer system. However, the programs can be implemented in assembly or machine language, if desired. In any case, the language may be a compiled or interpreted language.

Each such computer program is preferably stored on a storage medium or device (e.g., CD-ROM, hard disk or magnetic diskette) that is readable by a general or special purpose programmable computer for configuring and operating

the computer when the storage medium or device is read by the computer to perform the procedures described in this document. The system may also be considered to be implemented as a computer-readable storage medium,

- 5 configured with a computer program, where the storage medium so configured causes a computer to operate in a specific and predefined manner.

Other embodiments are within the scope of the following claims.

- 10 What is claimed is:

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